

**Docket: 8071-188T (OPP030864US)**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Dae-Ho CHOO, et al.

Examiner: Timothy L. Rude

Serial No.: 10/602,054

Group Art Unit: 2871

Filed: June 24, 2003

Docket: 8071-188T (OPP030864US)

For: **IN-LINE SYSTEM AND METHOD FOR MANUFACTURING  
LIQUID CRYSTAL DISPLAY**

Mail Stop: AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Sir:

This paper is being filed in support of the Notice of Appeal being filed together  
herewith with the United States Patent and Trademark Office.

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## **REMARKS**

Please consider the following reasons for this Pre-Appeal Brief Request for Review. Claims 57-60 and 62-77 are pending. Claims 59 and 66-77 have been withdrawn. Claims 57, 58 and 60-65 stand rejected. It is noted that the rejection to claim 61 appears to be an error because claim 61 was canceled without prejudice by Applicant in Applicants' response filed on December 1, 2008.

**(i) Claim 57 has been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,978,065 to Kawasumi et al. ("the Kawasumi patent") in view of Japanese Patent Application Publication No. JP 56114928 to Adachi ("the Adachi publication") and U.S. Patent No. 6,222,603 to Sakai et al. ("the Sakai patent").**

**(ii) Claims 58 and 60 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasumi in view of Adachi and Sakai as applied to claim 57 above, and further in view of U.S. Patent No. 2,394,293 to Deem ("the Deem patent").**

**(iii) Claims 61-65 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasumi in view of Adachi and Sakai, and further in view of U.S. Patent No. 5,731,860 to Harada et al. ("the Harada patent").**

In response, it is submitted that the Examiner committed clear error in making the above rejections for at least the reasons set forth below.

Claim 57 reads as follows:

57. An in-line system for manufacturing liquid crystal displays, comprising:

a first loading unit;

a substrate-combination unit operatively connected to the first load unit, the substrate-combination unit adapted to receive a first substrate from the first load unit and adapted to receive a second substrate having at least one of a sealant and a liquid crystal material deposited thereon;

an in-line convey unit; and

a substrate-attaching unit adapted to receive the first substrate and the second substrate from the substrate-combination unit via the in-line convey unit and to conjoin the substrates in a vacuum state,

wherein the substrate-attaching unit comprises:

a substrate-attaching vacuum chamber comprising:

a first compression plate and a second compression plate supporting the two substrates and applying a predetermined force toward each other; and

an exposure unit hardening the sealant.

In particular, as conceded by the Examiner on pages 5-6 of the Final Office Action dated February 20, 2009, the combination of the Kawasumi patent and the Adachi publication at the very least fails to teach or suggest an in-line system for manufacturing liquid crystal displays which includes a substrate-attaching unit having a substrate-attaching vacuum chamber which includes a first compression plate and a second compression plate supporting the two substrates and applying a predetermined force toward each other and an exposure unit hardening the sealant, as required by claim 57.

The Examiner attempts to cure the above-mentioned deficiencies of the Kawasumi and Adachi references by citing the Sakai reference in the Final Office Action dated February 20, 2009. **(See page 6 of the Final Office Action dated February 20, 2009).** The Examiner contends that it would have been obvious to one skilled in the art to modify the LCD system of Kawasumi and Adachi with the substrate attaching unit described in the Sakai reference. **(See page 7 of the Final Office Action dated February 20, 2009).**

However, it is respectfully submitted that the Examiner cannot modify the Kawasumi and Adachi references in the manner set forth in the Final Office Action dated February 20, 2009 to include the teachings of the Sakai reference because at the very least the Kawasumi reference teaches away from the Examiner's proposed modification. Thus, the Examiner committed clear error in combining the Kawasumi, Adachi and Sakai references in the manner set forth in the Final Office Action dated February 20, 2009 as discussed below and thus the above rejections to claim 57 are defective.

In the February 20, 2009 Final Office Action, the Examiner maintains that

*"The base reference may teach away ; it is the secondary reference that may not teach away. Also, Kawasumi does not teach away. It merely says that one may perform the method without vacuum [ "not necessary to use an expensive vacuum apparatus" col. 7, lines 1-15]."*

**See Final Office Action dated February 20, 2009, page 11.**

In this regard it is noted that it appears that the Examiner has misinterpreted the teachings of the Kawasumi reference and also misinterpreted the patent law regarding obviousness/teaching away.

It is well known under the U.S. patent laws that it is improper to combine references where the references teach away from their combination. (See MPEP 2145, **paragraph D** ). Moreover, teaching away may be found when a reference criticizes, discredits, or otherwise discourages the solution claimed. (See MPEP 2142.01, **paragraph VI**).

The Examiner's position seems to be in the Final Office Action dated February 20, 2009 that Kawasumi teaches that one may utilize it's methods without using costly vacuum conditions but that the Kawasumi reference does not actually teach away from utilizing vacuum conditions. This position by the Examiner is erroneous because the Examiner appears to be missing the point that Kawasumi is teaching replacing those apparatuses which utilize vacuum conditions with its apparatus which do not utilize vacuum conditions.

In particular, the Kawasumi reference states in its disclosure what it perceives to be disadvantages and problems associated with using vacuum conditions (e.g. long manufacturing times and costly manufacturing costs.) , thereby having the effect of discrediting the use of vacuum conditions and discouraging one skilled in the art from using these conditions. (See Col. 1, lines 26-50 and Col. 7, lines 4-7 of the Kawasumi patent).

In sum, as Kawasumi describes it's apparatuses as a replacement for and which overcomes the disadvantages and problems associated with equipment which utilize vacuum conditions for LCD manufacture, the Kawasumi reference thus clearly teaches away from the use of vacuum conditions. Consequently, for at least the reasons set forth above, one skilled in the would be lead away/discouraged from applying the teachings of the Sakai reference with regard to vacuum conditions to modify the apparatus of Kawasumi and Adachi.

Accordingly, for at least the reasons set forth above, the Examiner committed clear error in combining Kawasumi and Adachi with the Sakai reference as proposed by the Examiner in the Final Office Action dated February 20, 2009 and thus the above rejection to claim 57 is defective. Withdrawal of the above rejections to claims 57 is therefore respectfully requested. As claims 58, 60 and 62-65 depend from claim 57, the Examiner also committed clear error in rejecting these claims for at least the same reasons as set forth above with regard to claim 57 and thus withdrawal of the rejections to these dependent claims is likewise requested.

In addition to the reasons set forth above, the Examiner also committed clear error as explained below. Even assuming arguendo that the cited references were combinable, the cited references of Kawasumi, Adachi, Sakai, Harada and Deem alone or in combination with each other would still fail to render the present invention obvious.

In particular, it is noted that the Sakai reference may at best only disclose a vacuum chamber in which a substrate-attaching unit conjoins the first substrate and the second substrate.

However, the present invention claims the substrate-attaching unit including two or more vacuum chambers, a substrate-attaching vacuum chamber, and connecting units. In addition, the vacuum chambers are arranged in parallel and are respectively connected to the substrate-attaching unit via the connecting units, and to the substrate-attaching vacuum chamber via the respective connecting units for an in-line system.

Hence, the present invention would not have been obvious to one having ordinary skill in the art and the Examiner committed clear error in rejecting the claims of the present invention.

As such, based on the above-mentioned clear errors with regards to claims 57, 58, 60 and 62-65, an early and favorable reconsideration is earnestly solicited.

Respectfully submitted,



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## PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

8071-188T/sla

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on \_\_\_\_\_

Signature \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Application Number

10602054

Filed

06/24/2003

First Named Inventor

DAE-HO CHOO

Art Unit

2871

Examiner

TIMOTHY L RUDE

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.  
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.  
(Form PTO/SB/96)

☒ attorney or agent of record.  
Registration number 41,587

☐ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 \_\_\_\_\_

  
Signature

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April 9, 2009

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.  
Submit multiple forms if more than one signature is required, see below\*.

☐ \*Total of \_\_\_\_\_ forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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